## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

#### (19) World Intellectual Property Organization International Bureau



### 1 0.011 (100.000) (1 0.0100 (100.000) (100.000) (100.000) (100.000) (100.000) (100.000) (100.000)

(43) International Publication Date 11 November 2004 (11.11.2004)

**PCT** 

# (10) International Publication Number WO 2004/096482 A1

- (51) International Patent Classification<sup>7</sup>: B23K 26/10, 26/38, 26/42, B42D 15/10, B26D 7/18, B65H 29/02, B23K 26/08, B23Q 11/00
- (21) International Application Number:

PCT/IB2004/001273

- (22) International Filing Date: 21 April 2004 (21.04.2004)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

03009986.5

2 May 2003 (02.05.2003) EP

- (71) Applicant (for all designated States except US): KBA-GIORI S.A. [CH/CH]; 4, Rue de la Paix, CH-1003 Lausanne (CH).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): SCHAEDE, Johannes Georg [DE/DE]; Max-Heim-Strasse 8, 97074 WURZBURG (DE).
- (74) Agents: GROSFILLIER, Philippe et al.; C/O BUGNION S.A., Case Postale 375, CH-1211 Genève 12 (CH).

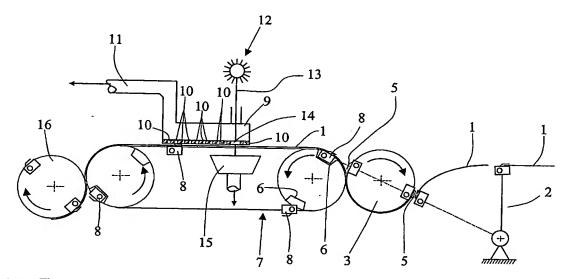
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MACHINE AND PROCESS FOR CUTTING OPENINGS IN A SUBSTRATE



(57) Abstract: The machine has at least a cutting tool (12), a transfer system (7,8) holding said substrate (1) and driving said substrate (1) along a determined direction. The cutting tool (12) comprises a laser beam (13) that can be moved in two perpendicular directions and evacuation means (11,15) to evacuate a cut part of said substrate (1).

